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McCoy, Erin

From: McCoy, Erin
Sent: Friday, July 17, 2015 1:02 PM
To: 'Jackson, Hylton [DNR]'
Cc: Engeman, Diana; Richards, Robert; Lundberg, Cal [DNR]; Moon, Alex [DNR]
Subject: RE: Vogel Groundwater Remediation

Hylton, as part of a FYR, there should be an evaluation of the RAOs stated in the ROD to determine whether the remedy is meeting or will meet RAOs. Depending on the outcome of the evaluation, it may be necessary to modify the RAOs, modify the remedy or conduct further response actions. (Paraphrased from Section 4.2.4 of the Comprehensive FYR Guidance). The 2nd (2004) and 4th (2014) five- year reviews, as well as the 2009 IDNR letter to EPA previously referenced state that the groundwater remedial action has not been making progress toward the RAO. If it was determined that if no progress for the RAOs was occurring, the groundwater treatment system was supposed to be turned back on per the 2003 Consent Order, paragraph 6.a. The system was not turned back on. Even the 3rd five year review states that the groundwater RAO is not being met and that access to contaminated groundwater is not protective in the long term. (*Page 33, Issue #1 - 1. Continue groundwater sampling because the groundwater remedial action objective (i.e., health-based standards at the site boundary) is currently not being met.).*

The overall point intended by my previous e-mail was that there is an existing decision document and Consent Order in place for the site. Whether the remedy needs to be implemented per the decision document under the terms of the existing Consent Order is certainly at issue, since it is apparent that site conditions since 2003 have changed, as well as our knowledge of how to address the environmental risks posed by the site. But as we discussed yesterday, we either have to enforce the current Consent Order or be working towards/on a modification. If the document needs to be modified to implement a remedy that is protective and more applicable, then steps must be taken to make those changes and progress needs to be measurable and timely.

I have no doubt that Vogel has been a very cooperative and responsible party. However, review of the record and this discussion indicate that IDNR and EPA have not necessarily agreed on what is the best course of action for the site, although a compromise has managed to be reached since the overall goal is the same. That is why I proposed the July 20th conference call, so that we could discuss 1) the groundwater monitoring report and the requested revisions/responses from both IDNR and EPA, and 2) what needs to be done going forward so that both IDNR and EPA can hopefully be on the same page before we involve Vogel.

Please let me know if you have any questions before the meeting. Here are the areas of the above mentioned reports we discussed:

2nd 5-Year Review – Sep 24, 2004

Cover memo, second paragraph - The Second Five-Year Review report concludes that the remedy at the Vogel site currently protects human health and the environment because there is no exposure to site-related contaminants. However, ***in order for the remedy to be protective in the long-term, the potential for off-site migration of contamination needs to be determined and controlled,*** if necessary, to ensure long-term protectiveness.

June 24, 2005 Letter to Jim Colbert (EPA) from IDNR

Paragraph 1, sentence 3 – 5 - The order called for discontinued operation of the groundwater pump-and-treat system, sampling to confirm stable conditions, and an institutional control precluding use of groundwater from the Site. Contingency actions were prescribed in the event off-site migration of contamination was identified or anticipated.

Subsequent confirmation sampling revealed unanticipated groundwater contamination above cleanup standards at the site boundary.

Page 3, Bullet 1 - ***Discontinued operation of the groundwater remediation system in November 2002 could have allowed contamination to migrate off-site.***

Page 3, Paragraph 2, Sentence 1 - ***The discontinued operation of the groundwater remediation system cannot be ruled out as a cause of the off-site contamination.***

Page 4, Paragraph 2 and 3 - Review of the 2004 Five-Year Review recommendations. The October 2000 Explanation of Significant Differences (ESD) and the May 2003 consent order established criteria for discontinuation of active groundwater remediation (i.e., the groundwater pump-and-treat system) as follows:
- no exceedence of chemical-specific, drinking-water standards at the property boundaries,
- no expansion of groundwater contamination as demonstrated by stable or decreasing groundwater contaminant levels throughout the site, and
- no other evidence that suggests the potential for migration of groundwater from the site at levels in excess of chemical-specific, drinking-water standards.

These criteria have obviously not been attained. The 2004 Five-Year Review identified the following issues that address noncompliance with these criteria:
- The extent and fate of off-site groundwater contamination had not been determined.
- The ability of the existing groundwater remediation system to prevent off-site migration of contaminants was in question.
- Despite extensive measures to eliminate the source of groundwater contamination, groundwater contamination persists at significant concentrations.

Page 5, Item 3, First Bullet - 3. Reevaluate potential remedial action alternatives. Possible remedial action alternatives include:
- ***Continued operation of the existing groundwater remediation system,***

Page 6, Paragraph 4 - With all three possible explanations for the off-site contamination, groundwater monitoring without the operation of the groundwater remediation system would be advantageous. ***Nonoperation of the groundwater remediation system at this time, however, would be in violation of the May 2003 consent order.*** Therefore, the Iowa Department of Natural Resources is issuing a ***temporary*** variance from this requirement of the consent order.

E-Mail from EPA to IDNR, 8/26/05, Subject: Vogel Revised Draft Letter

General Comment - EPA believes that offsite migration of groundwater contaminants will continue without the implementation of a remedial/containment program due to the presence of onsite contamination and ***it must be recognized that the 2003 Consent Order between Iowa DNR and Vogel anticipates operation of a groundwater remediation system in the event groundwater concentrations are migrating offsite at concentrations that exceed statewide standards. However, EPA does not disagree with the proposed monitoring without the groundwater remediation system in operation to help determine if offsite groundwater concentrations are the result of a slug of contamination versus a more continuous migration from onsite sources.*** However, as recognized in the June 20"' letter, the groundwater plume could expand absent the operation of the pump and treat system and require additional remedial efforts in offsite areas.

3rd 5-Year Review

Page 17, paragraph 2, last half - ***The original pump and treat system using the air stripper was modified to irrigate the young trees using a pump and spray irrigation system. The aeration caused by the spray irrigation system has been shown to effectively remove contaminants from the water.*** (Therefore the system was kind of in effect during this time – Comment added by Erin McCoy on 7/7/15) ***Instead of the air stripper tower, the spray irrigation system is currently***

being used to treat groundwater. Two of the original recovery wells and a boundary monitoring well have been pumped for irrigation. The hydraulic control that is provided by the seasonal pumping of the recovery wells for irrigation purposes is a key component of the irrigation/phytoremediation pilot study. The irrigation is intended to be short-term (another 2 years) to help the trees get started. The longterm goal is to eliminate the pumping component and rely upon phytoremediation and natural attenuation to control off-site migration of contaminated groundwater. ***However, the need for long-term hydraulic control will be evaluated prior to discontinuing seasonal irrigation of the trees.*** – Have not found a record of this being performed.

Page 20, paragraph 3 - Groundwater elevation data that was collected during a 2008 sampling event is displayed on Figure 5.1 to illustrate the influence that seasonal pumping of the recovery wells (i.e., RW-102, RW-104, and GMW-33) has on groundwater flow. Hydraulic groundwater flow calculations indicate that groundwater originating in the area of recovery well RW-104 will not move outside the capture zone of RW-104 during the seasonal shutdown timeframe. Therefore, the pumping/irrigation component of the groundwater remediation system appears to be able to prevent further off-site groundwater contamination. However, the existing off-site groundwater contamination, which is outside the influence of the groundwater remediation system, will persist until sufficient time elapses for natural attenuation to remove it. Natural attenuation processes will be evaluated in conjunction with the ongoing irrigation/ phytoremediation pilot study. – Have not found a record of this being performed.

Page 25, Section 7.0, paragraph 1, sentence 2 - ***The remedy for the groundwater operable unit (OU-02) is not functioning as intended by the decision documents.***

Page 31, Section 7.4, paragraph 2, sentence 3 - ***The groundwater remedial action is not currently functioning as intended in the ROD and ESDs as evidenced by groundwater contamination in monitoring wells located on the southern boundary and in an off-site area located south of the southern boundary.***

Page 33, Issue #1 - 1. ***Continue groundwater sampling because the groundwater remedial action objective (i.e., health-based standards at the site boundary) is currently not being met.***

Page 35, Issue #8 - 8. Document changes to groundwater remedy with post-ROD decision document. Reassess, and if appropriate, modify the current groundwater remedy that was selected in the ROD, as subsequently modified by the July 1994 ESD and the October 2000 ESD. Complete a ROD Amendment, ESD, or other appropriate mechanisms to document the post-ROD changes. Implementing the recommendations listed above (i.e., 1 through 7) will provide information to help support post-ROD changes to the groundwater remedy. – Not performed

Page 37, Section 10 Protectiveness Statement - However, in order for the remedy to be protective in the long-term, the following actions need to be taken: Evaluate the effectiveness of irrigation/phytoremediation activities and natural attenuation processes to remediate groundwater and prevent off-site migration of contaminated groundwater. Modify remedy as appropriate. – Since this was not performed, the method cannot be determined to be protective.

4th 5-Year Review

Page i, Paragraph 6 - Based on the review, the following actions are recommended in this five-year review:

- ***Restart or reconstruct the existing groundwater treatment plant.***

Page ii, Last Paragraph - The OU-02 remedy is protective in the short term because there is no unacceptable exposure to human or ecological receptors. ***However, in order to be protective in the long term,*** it is recommended that additional creek samples be collected to assure sediment and surface water samples remain at acceptable levels ***and the groundwater plume needs to be effectively remediated and contained.***

Page 8, Paragraph 2, Sentence 1 and 2 - ***The October 2000 ESD also clarified the criteria to determine if, and when, discontinuation of active groundwater remediation was warranted. The criteria included no exceedance of groundwater cleanup standards at the property boundaries, no expansion of groundwater contamination as***

demonstrated by stable or decreasing groundwater contaminant levels throughout the site, and no other evidence that would suggest the potential for migration of groundwater from the site at levels in excess of cleanup standards.

Page 13, Paragraph 3, sentence 1 - ***Groundwater concentrations are increasing in off-site wells and as a result, EPA is recommending the groundwater treatment system be restarted or reconstructed to contain the groundwater plume.***

Page 23, Section 7, Question 7.1 - Is the remedy functioning as intended by the decision documents?
The remedy for contaminated groundwater is not functioning as intended by the decision documents.

Page 23/24, last and first sentence - Therefore, the groundwater remedy is not currently functioning as intended in the decision documents. ***It is recommended that the pump and treat system be restarted or reconstructed to contain and remediate the plume.***

Page 24, Paragraph 3, Sentence 4 - The response actions as currently implemented are not effective because the RAO to prevent off-site migration of contaminated groundwater is not being met, ***which warrants consideration for restarting or reconstructing the groundwater treatment system if these conditions persist.***

Page 25, Paragraph 1 - The RAO to prevent off-site migration of contaminated groundwater is not being met. The response action outlined in the decision documents, groundwater remediation via pumping and treatment through an air stripper, has not occurred since 2004. ***The current approaches to groundwater remediation using phytoremediation and natural attenuation have not been effective at meeting the RAO.***

Page 32, Section 9.0, Issue 1 – ***Restart or reconstruct the existing groundwater treatment plant.***

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From: Jackson, Hylton [DNR] [mailto:Hylton.Jackson@dnr.iowa.gov]
Sent: Tuesday, July 07, 2015 8:19 AM
To: McCoy, Erin
Cc: Engeman, Diana; Richards, Robert; Lundberg, Cal [DNR]; Moon, Alex [DNR]; Keith Delange; Scott.Heemstra@vogelpaint.com
Subject: RE: Vogel Groundwater Remediation

Erin, I do have concerns about the existing remediation system's ability to have any significant influence on the groundwater plume as it currently exists at the Vogel site, but I must first address some of the assertions of your last email.
In part, you state that;

- *"Overall, the historic record shows that while EPA agreed to turn off the groundwater remediation system, it was only for a short time to verify that the system was capable of containing the contamination."*

- *"A review of documents show that EPA has been saying the site is out of compliance since 2004 because the plume is still growing and the groundwater remediation system is not active."*

These statements are not accurate based on the record. The original remedial groundwater system, which consisted of five recovery wells pumping to an air stripper, began seasonal operation in the spring of 1992 and ran until the spring of 2003. The system was reactivated in August 2003 and seasonally operated until December 2004. This operational

history is summarized in the Vogel's 3rd Five-Year Review dated 2009 (see attached). That Five-Year Review contained eight recommendations, none of which proposed restarting the original groundwater remediation system even though it's use had been discontinued five years earlier. EPA was given an opportunity to review the draft of the 3rd Five-Year Review and comment. In EPA's response dated September 23, 2009 (see attached Vogel-EPA-AP pdf), EPA agreed with the protectiveness statement , recommendations and follow-up actions contained in the Five-Year Review. In Iowa DNR's submittal letter for the final review document (see attached Vogel-DNR-3rd-pdf) dated September 23, 2009, Bob Drustrup stated that *"The five-year review has been prepared in consultation with EPA Region 7 and it is our understanding that EPA Region 7 concurs with the conclusions and recommendations in the report."* Clearly, EPA has not been *"saying the site is out of compliance since 2004".* There is little in the site record that indicates that EPA has not been kept apprised of site conditions nor anything to indicate that their concerns have been ignored.

There are undoubtedly criteria and response actions in this site's history that have deviated from specifics outlined in some of the historic decision documents. The decision to modify those responses has not been made unilaterally by either of the regulatory agencies (Iowa DNR and EPA) or by Vogel. This facility was listed as an NPL site in 1986, and Vogel has proven to be a very cooperative and responsible party. Future efforts of how to characterize and deal with the groundwater plume are sure to generate discussions between the interested parties. There is no reason to believe that those future discussions will not lead to mutually acceptable response actions that will address site concerns and prove to be both effective and efficient. And, in looking forward to those future efforts, could you please provide an agenda for the July 20 conference call?
Thanks

HYLTON JACKSON Environmental Specialist

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Leading Iowans in Caring for Our Natural Resources.
PLEASE NOTE: Effective Monday, November 24, 2014, my phone number will change to 515-725-8338 and FAX number will be 515-752-8202

From: McCoy, Erin [mailto:McCoy.Erin@epa.gov]
Sent: Tuesday, June 30, 2015 3:46 PM
To: Jackson, Hylton [DNR]
Cc: Engeman, Diana; Richards, Robert; Lundberg, Cal [DNR]
Subject: Vogel Groundwater Remediation

Hylton, per our conversation earlier this week, I've reviewed several of the historic documents on file. Overall, it looks like IDNR and EPA discussed or mentioned the restart of the groundwater remediation system several times between 2004 and present. It was first mentioned in the 2nd 5-year review (2004), again in a letter written by Robert Drustup (IDNR) to Jim Colbert (EPA) titled Site Updated and Recommendations (2005), again in the last 5-year review (2014) and in several documents in between.

Overall, the historic record shows that while EPA agreed to turn off the groundwater remediation system, it was only for a short time to verify that the system was capable of containing the contamination. During system shut off, the system was to be maintained per the Consent Order **[Article VI (1) The groundwater remediation system will be maintained in a standby mode until its reactivation is required based on monitoring results per Paragraph 6 herein or all the terms of this consent order are satisfied per Paragraph 8 herein].** Proof of the system maintenance was supposed to be supplied **[Article VI (1) Vogel will document the semiannual startup of the groundwater remediation system in the**

next quarterly report per Paragraph 5 herein]. If the following conditions were not met, the system was to be turned back on:

- no exceedence of chemical-specific, drinking-water standards at the property boundaries,
- no expansion of groundwater contamination as demonstrated by stable or decreasing groundwater contaminant levels throughout the site, and
- no other evidence that suggests the potential for migration of groundwater from the site at levels in excess of chemical-specific, drinking-water standards.

These criteria were obviously not been attained. However, instead of turning the system back on, Vogel decided to try phytoremedation instead because the plume had grown outside of the groundwater remediation systems effective area during the system shut off and the system was not working despite a condition in the 2003 Consent Order.

I know that you are reluctant to rely on the groundwater remediation system and doubt that it will pull the plume back (per our conversation); however, until the legal documents are replaced, they need to be enforced. A review of documents show that EPA has been saying the site is out of compliance since 2004 because the plume is still growing and the groundwater remediation system is not active. This has been reiterated in several communications between IDNR and EPA, both by IDNR and EPA. If the phytoremediation had worked, a new Consent Order would have been perused; however, it did not and a new Consent Order was not created. Therefore, the old one needs to be enforced. I have no issues with the PRP pursing alternative remedial actions, but they have to be able to comply with their current Consent Order in the meantime.

If you have any questions before our July 20th conference call, please contact me. Thanks!

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